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# MODEL NC111 SINGLE TONE ENCODER
# INSTRUCTION MANUAL

## INTRODUCTION

The Model NC111 is a high stability, field tunable, Single Tone Encoder and has been designed for both burst or continuous tone requirements. The Model NC111 is generally used in conjunction with a Single Tone Decoder, such as our Model NC108, for control of remote applications. The NC111 comes in two versions: The NC111-A High Speed (800Hz to 3000Hz) and the NC111-B Slow Speed (280Hz to 1500Hz).

## GENERAL

Although the Model NC111 Single Tone Burst Encoder has been engineered for maximum reliability and ease in interfacing, should you require technical assistance or detailed information for a specified application, i.e.; interfacing special timing or frequency formats, please contact our Customer Service Department at: (530) 477-8400.

## SPECIFICATIONS

| **MODEL:** | **NC111-A** | **NC111-B** |
|---|---|---|
| Signal Format: | Single tone | Same |
| Frequency Range: | (800Hz to 3000Hz) | (280Hz to 1500Hz) |
| Freq. Stability: | Better than ± 0.5% | Same |
| Output Level: | 0 to 750mVrms (no load) | Same |
| Output Impedance: | >1K Ohms | Same |
| Filter Distortion: | 〈1% (Thd) | Same |
| Operating Voltage | 7VDC to 25VDC | Same |
| Operating Current | 4mA Nominal | Same |
| Operating Temp.: | -30°C to +70°C | Same |
| Size: | 1.0W x 1.0"L x .18"H | Same |
| Mounting: | Double sided adhesive tape | Same |
| Interfacing: | 12" flying colored leads | Same |

## WARRANTY POLICY

NorComm products are unconditionally guaranteed for two (2) years on materials and labor from date of purchase.

All Warranty repairs must be performed at NorComm's Customer Service Department in Grass Valley, CA. Units under warranty can be returned for repair or replacement without prior authorization, however, a letter explaining the defect should be enclosed with the unit. Out of warranty units returned constitute Purchaser's authorization for NorComm to repair or replace equipment and to invoice Purchaser for any and all reasonable costs of repair labor, parts and freight.

NorComm shall not be obligated to repair or replace equipment rendered defective, in whole or in part, by causes external to the equipment, such as, but not limited to, catastrophe, power failure, or transients, environmental extremes, improper use, and maintenance or interfacing applications. NorComm further assumes no liability for any incidental or consequential damages which may result from the applications of its products by the Purchaser or any other party.

**--SPECIFICATIONS ARE NOMINAL AND SUBJECT TO CHANGE WITHOUT NOTICE--**

# INTERFACING

The Model NC111 comes with a piece of double sided adhesive tape to eliminate the need for mounting hardware. When tuning of the filter is completed, remove the protective covering from one side of the tape and apply to bottom side of P.C. Board. Make sure that location of mounting surface is clean and dry to insure positive mounting. Now remove protective cover from remaining side of tape and mount unit to desired locations. To insure maximum operations reliability, the decoder should be mounted away from intensive R.F. and magnetic fields and all leads should be kept to minimum lengths.

[1] RED (+) . . . . . Connect to 7VDC to 25VDC

[2] BLACK (-) . . . . . Connect to system ground.

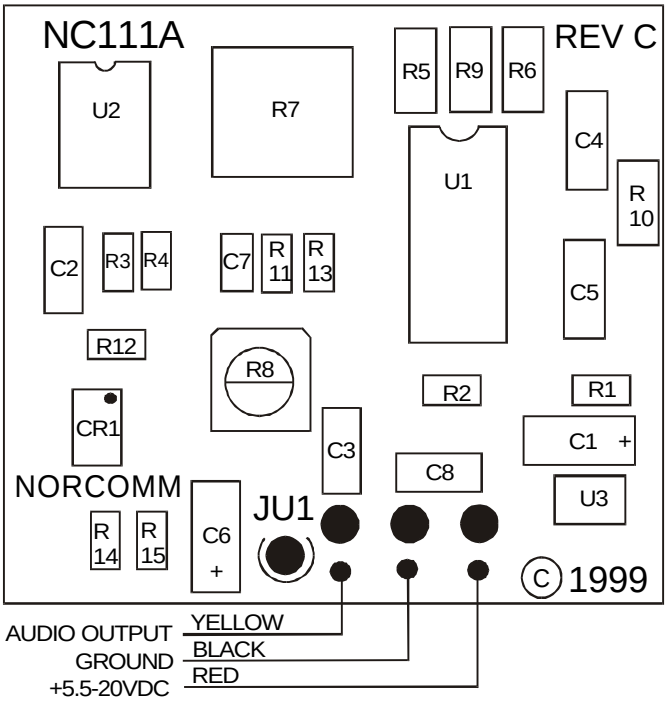
[3] YELLOW . . . . . Connect to audio input circuitry.

[4] For burst operation, cut jumper JU1. Duration is factory selected for 300ms. For 500ms, cut resistor R14; for 1 second, cut R13.

[5] Signal output is usually applied directly to microphone input circuitry loading due to the low output impedance of the encoder.

[6] To select frequency, apply power, making sure JU1 is installed and adjust R7 for desired frequency. Adjust R8 for required tone output level.

## COMPONENT LAYOUT




## SCHEMATIC